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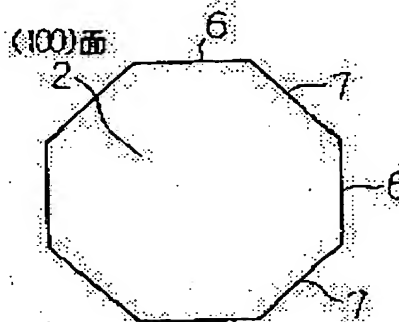
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## (54) METHOD FOR SYNTHESIZING LARGE-SIZED DIAMOND SINGLE CRYSTAL

## (57)Abstract:

**PURPOSE:** To stably synthesize a large-sized diamond single crystal in a wide temp. range by forming the growth plane in a circle, an ellipse or polygons such as regular hexagon or higher and growing the crystal at temp. higher by 20–90° C than the eutectic point of the solvent and the carbon source.

**CONSTITUTION:** The large-sized diamond single crystal is synthesized by forming the growth surface of (100) plane 2 into a regular hexagon, circle or ellipse on which hexahedron or octahedron crystal can easily grow, and by growing the crystal at temp. higher by 20–90° C than the eutectic point of the solvent and the carbon source. By this method, the morphology of crystal can be made coincide with the growing single crystal. The solvent is hardly included in the crystal as far as the growing temp. is lower than (eutectic point +90)° C, even when the synthesizing temp. is higher by 20–60° C than the eutectic temp. of the solvent and the carbon source and the growing single crystal forms in an octahedron or hexahedron.



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